WHAT IS CLAIMED IS:

1. A method of detecting the presence or absence of a NMO-specific autoantibody in a biological sample from an individual, comprising the steps of:

contacting said biological sample with a NMO antigenic polypeptide or fragment thereof, wherein said NMO antigenic polypeptide is aquaporin-4; and

detecting the presence or absence of binding of said NMO antigenic polypeptide to said NMO-specific autoantibody in said biological sample.

2. The method of claim 1, wherein the presence of said NMO-specific autoantibody in said biological sample is associated with vision impairment, weakness, numbness, spasms or abnormal or painful sensations, and/or loss of bladder and/or bowel control in said individual.

3. The method of claim 1, wherein the presence of said NMO-specific autoantibody is associated with NMO in said individual.

4. The method of claim 1, wherein said NMO antigenic polypeptide is a recombinantly-expressed NMO antigenic polypeptide.

5. The method of claim 1, wherein said NMO-specific polypeptide is in a solid tissue selected from the group consisting of brain, spinal cord, optic nerve, kidney, or stomach.

6. The method of claim 1, wherein said biological sample is selected from the group consisting of blood, serum, plasma, and cerebrospinal fluid.

7. A method of detecting the presence or absence of a NMO antigenic polypeptide in a biological sample from an individual, comprising the steps of:

contacting said biological sample with an anti-NMO antigen antibody, wherein said NMO antigen is aquaporin-4; and

detecting binding of said anti-NMO antigen antibody to said biological sample, wherein binding is indicative of the presence of said NMO antigenic polypeptide in said biological sample.

8. The method of claim 7, wherein the presence of the NMO antigenic polypeptide in said biological sample is indicative of NMO in said individual.

9. The method of claim 7, wherein said individual is partially or completely blind.

10. The method of claim 7, wherein said biological sample is selected from the group consisting of blood, serum, plasma, cerebrospinal fluid, brain biopsy and spinal cord biopsy.

11. An article of manufacture, comprising a NMO antigenic polypeptide and instructions for using said NMO antigenic polypeptide to detect an anti-NMO antigen autoantibody in an individual, wherein said NMO antigenic polypeptide is aquaporin-4.

12. The article of manufacture of claim 11, wherein said article of manufacture is used to diagnose NMO in said individual.

13. The article of manufacture of claim 11, further comprising a monoclonal antibody having specific binding affinity for a NMO antigenic polypeptide.

14. A method of treating an individual having NMO, said method comprising:

withdrawing a body fluid from the individual, wherein the body fluid contains one or more autoantibodies that bind to aquaporin-4;

removing a substantial portion of the autoantibodies from the body fluid; and

returning the body fluid to the subject.

15. A method of treating an individual having NMO, said method comprising:

administering a NMO antigenic polypeptide to said individual, wherein said NMO antigenic polypeptide is aquaporin-4.

16. The method of claim 15, wherein said administration is by a method selected from the group consisting of orally, intravenously, and parenterally.

17. A method of treating an individual having NMO, said method comprising:

administering a nucleic acid encoding a NMO antigenic polypeptide to said individual, wherein said NMO antigenic polypeptide is aquaporin-4.